

NOTE:
DISTRIBUTION SHALL BE AS
INDICATED AND SHALL BE IN
ACCORDANCE WITH I.E.S.
DEFINITIONS.

LUMINAIRE REQUIREMENTS

1. HOUSING, DIE CAST ALUMINUM OR EXTRUDED OR FORMED ALUMINUM, WITH SEALED AND WELDED SEAMS.
2. REFLECTOR – FORMED ANODIZED ALUMINUM.
3. LENS – TEMPERED, IMPACT RESISTANT CLEAR GLASS.
4. LENS DOOR – HINGED ALUMINUM WITH GASKET, CAPTIVE SCREW OR LATCHES.
5. INTEGRAL MULTI-TAP BALLAST.
6. CONCEALED MOUNTING HARDWARE (ALL HARDWARE CORROSION RESISTANT).
7. PORCELAIN SOCKET WITH VIBRATION-PROOF LAMP GRIP SHELL.
8. FINISH – DARK BRONZE, BAKED ENAMEL, OR POLYESTER POWDER FINISH, EXCEPT AS INDICATED.
9. SLIPFITTER 60mm TO 75mm O.D. OR MOUNTING ARM.
10. LAMP – 70 TO 1000 WATT, HIGH PRESSURE SODIUM, WATTAGE AS INDICATED.
11. LAMP STABILIZER, 1000 WATT SIZE ONLY.
12. UL LISTED – SUITABLE FOR OUTDOOR WET LOCATION.
13. "HOUSE SIDE OR REAR SPILL" LIGHT SHALL BE LIMITED TO 20%,
WHEN INDICATED.
14. PHOTOCELL WHEN INDICATED.

MAX. E.P.A. 0.2787 SQ. M.

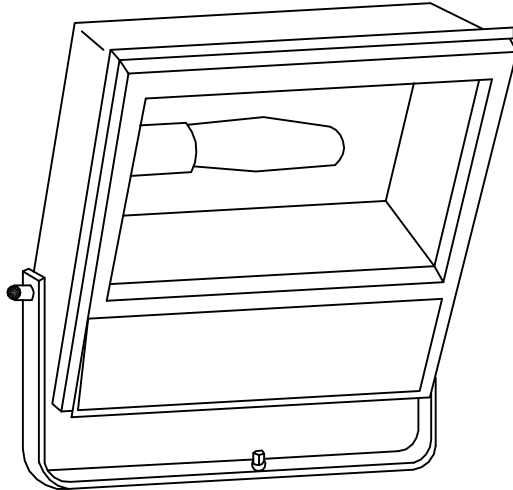
ROADWAY AND AREA LIGHT

SKETCH DATE

JUNE 2002

STYLE

XL-1



NOTE:
NEMA BEAM SPREAD
CONFIGURATION SHALL BE
AS INDICATED AND SHALL
BE IN ACCORDANCE WITH
I.E.S. DEFINITIONS.

LUMINAIRE REQUIREMENTS

1. HOUSING – DIE CAST ALUMINUM OR FORMED AND SEAM WELDED ALUMINUM, WITH BAKED ENAMEL OR POLYESTER POWDER FINISH.
2. REFLECTOR – ANODIZED ALUMINUM.
3. DOOR – HINGED ALUMINUM, WITH GASKET AND CAPTIVE SCREWS OR CAM LATCH FASTENERS.
4. INTEGRAL MULTI-TAP BALLAST.
5. STAINLESS STEEL OR NONCORROSIVE HARDWARE.
6. PORCELAIN SOCKET WITH VIBRATION-PROOF LAMP GRIP SHELL.
7. SLIPFITTER FOR 60mm TENON OR TRUNNION MOUNTING AS INDICATED.
8. PHOTOCELL WHEN INDICATED.
9. LAMP – 70 TO 1000 WATT – TYPE AND WATTAGE AS INDICATED.
10. PROVIDE 3/C #16 WEATHERPROOF CORD, MIN. 610mm LONG (TRUNNION MT. ONLY).
11. LAMP STABILIZER, 1000 WATT SIZE ONLY.
12. LENS – TEMPERED, IMPACT RESISTANT, CLEAR GLASS.
13. UL LISTED – SUITABLE FOR OUTDOOR WET LOCATIONS.
14. HOUSING COLOR SHALL BE DARK BRONZE UNLESS INDICATED OTHERWISE.

MIN. E.P.A. 0.195 SQ. M. – MAX. E.P.A. 0.51 SQ. M.

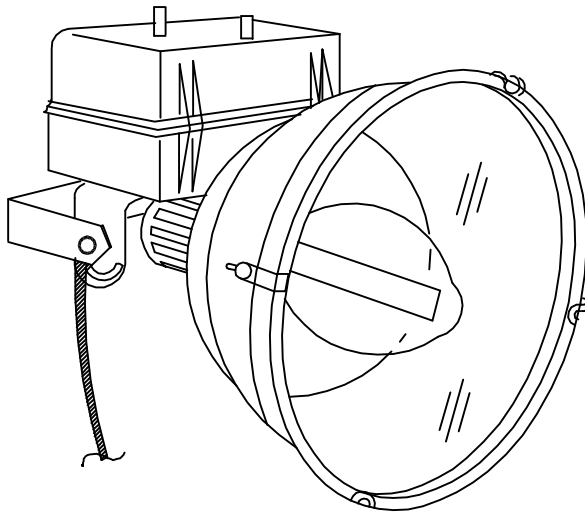
FLOODLIGHT

SKETCH DATE

JUNE 2002

STYLE

XL-2



LUMINAIRE REQUIREMENTS

1. CAST ALUMINUM BALLAST HOUSING.
2. ALUMINUM OUTER SHROUD.
3. SPUN ANODIZED ALUMINUM REFLECTOR.
4. TEMPERED, HEAT-RESISTANT CLEAR GLASS LENS.
5. HINGED STAINLESS STEEL DOOR WITH GASKET AND LATCHES.
6. 400 WATT, 1000 WATT AND 1500 WATT HIGH PRESSURE SODIUM OR METAL HALIDE, AS INDICATED.
7. INTEGRAL BALLAST, TYPE AND VOLTAGE AS INDICATED.
8. LAMP STABILIZER, 1000 WATT AND 1500 WATT SIZE ONLY.
9. GALVANIZED STEEL TRUNNION.
10. ALL HARDWARE, STAINLESS STEEL OR NONCORROSIVE.
11. PROVIDE 3/C #14 "SO" CORD, LENGTH AS REQUIRED.
12. PORCELAIN SOCKET, WITH VIBRATION-PROOF LAMP GRIP SHELL.
13. AIMING DEVICE.
14. UL LISTED – SUITABLE FOR OUTDOOR WET LOCATIONS.

MAX. E.P.A. 0.26 SQ. M.

BEAM EFFICIENCY	NEMA BEAM TYPE & EFFICIENCY				
	TYPE 1 NEMA 2	TYPE 2 NEMA 3	TYPE 3 NEMA 4	TYPE 4 NEMA 5	TYPE 5 NEMA 6
400 WATT HIGH PRESSURE SODIUM	30%	34%	50%	67%	70%
1000 WATT HIGH PRESSURE SODIUM	—	—	40%	50%	55%
400 WATT METAL HALIDE	35%	40%	60%	65%	65%
1000 WATT METAL HALIDE	34%	40%	60%	65%	65%
1500 WATT METAL HALIDE	34%	40%	60%	65%	65%

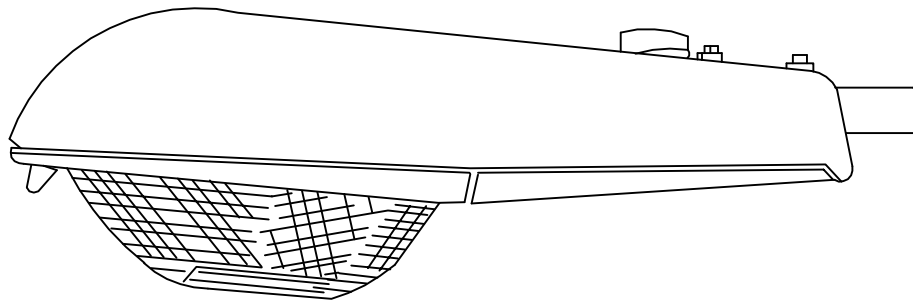
FLOODLIGHT AND SPORTS LIGHT

SKETCH DATE

JUNE 2002

STYLE

XL-3



LUMINAIRE REQUIREMENTS

1. REFRACTOR – PRISMATIC GLASS, EXCEPT AS INDICATED.
2. REFLECTOR – ANODIZED ALUMINUM.
3. HOUSING – DIE CAST ALUMINUM, WITH BAKED ENAMEL GREY FINISH.
4. HINGED ALUMINUM DOOR WITH GASKET AND LATCH.
5. INTEGRAL BALLAST – TYPE AND VOLTAGE AS SPECIFIED.
6. ALL HARDWARE, STAINLESS STEEL, OR NONCORROSIVE.
7. ADJUSTABLE PORCELAIN SOCKET.
8. 30mm TO 50mm, SLIPFITTER – 2 OR 4 BOLT.
9. PHOTOCELL AND RECEPTACLE, UNLESS OTHERWISE INDICATED.
10. LAMP – 70 WATT TO 400 WATT HIGH PRESSURE SODIUM –
WATTAGE AS INDICATED.
11. LEVEL INDICATOR.
12. UL LISTED – SUITABLE FOR OUTDOOR WET LOCATIONS.

NOTE: I.E.S. TYPE DISTRIBUTION AS INDICATED.

MAX. E.P.A. 0.12 SQ. M.

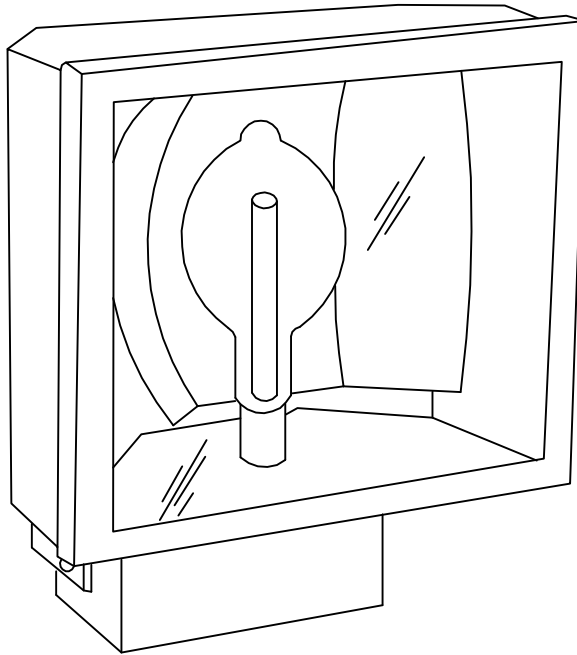
ROADWAY AND AREA LIGHT

SKETCH DATE

JUNE 2002

STYLE

XL-4



LUMINAIRE REQUIREMENTS

1. HOUSING – FORMED AND SEAM WELDED ALUMINUM, WITH POLYESTER POWDER FINISH. (DARK BRONZE)
2. REFLECTOR – POLISHED, SEGMENTED ANODIZED ALUMINUM.
3. LENS – TEMPERED, THERMAL AND SHOCK-RESISTANT GLASS.
4. DOOR FASTENERS – STAINLESS STEEL.
5. INTEGRAL BALLAST – 1000 WATT HIGH PRESSURE SODIUM OR 1000 WATT METAL HALIDE AS INDICATED.
6. HINGED, GASKETED DOOR, CLOSED CELL, SILICON FOAM.
7. PORCELAIN SOCKET, WITH VIBRATION-PROOF LAMP GRIP SHELL.
8. PROVIDE 3/C #16 WEATHERPROOF CORD, MIN. 610mm LONG.
9. GALVANIZED YOKE.
10. UL LISTED – SUITABLE FOR OUTDOOR WET LOCATIONS.

NOTE: LAMP, BALLAST, AND BEAM PATTERN SHALL BE AS INDICATED.

MAX. E.P.A. 0.51 SQ. M.

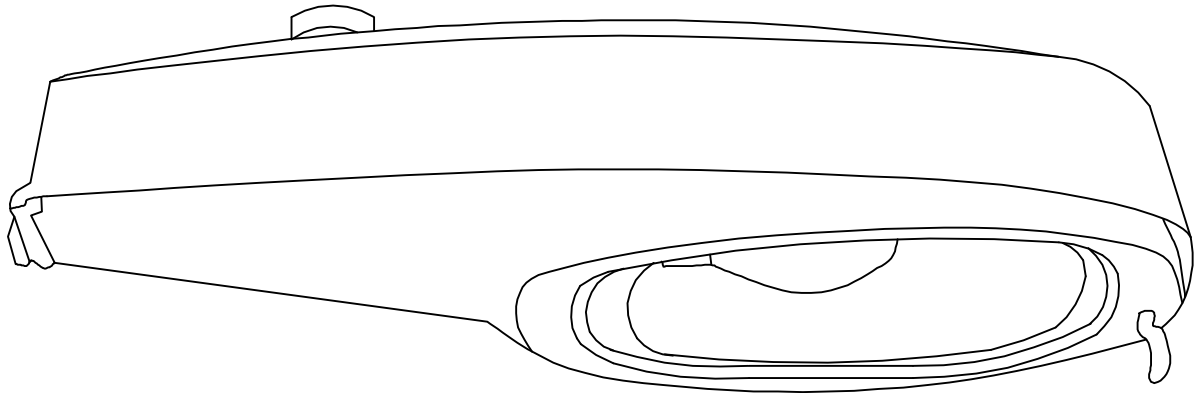
SPORTS AND AREA LIGHT

SKETCH DATE

JUNE 2002

STYLE

XL-5



LUMINAIRE REQUIREMENTS

1. HOUSING – CAST ALUMINUM, WITH BAKED ENAMEL OR POLYESTER POWDER FINISH.
2. LENS – FLAT TEMPERED GLASS.
3. REFLECTOR – ANODIZED ALUMINUM.
4. HINGED ALUMINUM DOOR WITH GASKET AND SPRING LATCH.
5. INTEGRAL BALLAST – TYPE AND VOLTAGE AS INDICATED.
6. ALL HARDWARE – STAINLESS STEEL OR NONCORROSIVE.
7. ADJUSTABLE PORCELAIN SOCKET.
8. 30mm TO 50mm SLIPFITTER – 2 OR 4 BOLT TYPE.
9. PHOTOCELL AND RECEPTACLE, UNLESS OTHERWISE INDICATED.
10. LAMP – 70 TO 400 WATT HIGH PRESSURE SODIUM – WATTAGE AS INDICATED.
11. LEVEL INDICATOR.
12. UL LISTED – SUITABLE FOR OUTDOOR WET LOCATIONS.
13. HOUSING SHALL BE MUNSELL GREY, UNLESS OTHERWISE SPECIFIED.

NOTE: I.E.S. TYPE DISTRIBUTION AS INDICATED.

MAX. E.P.A. 0.12 SQ. M.

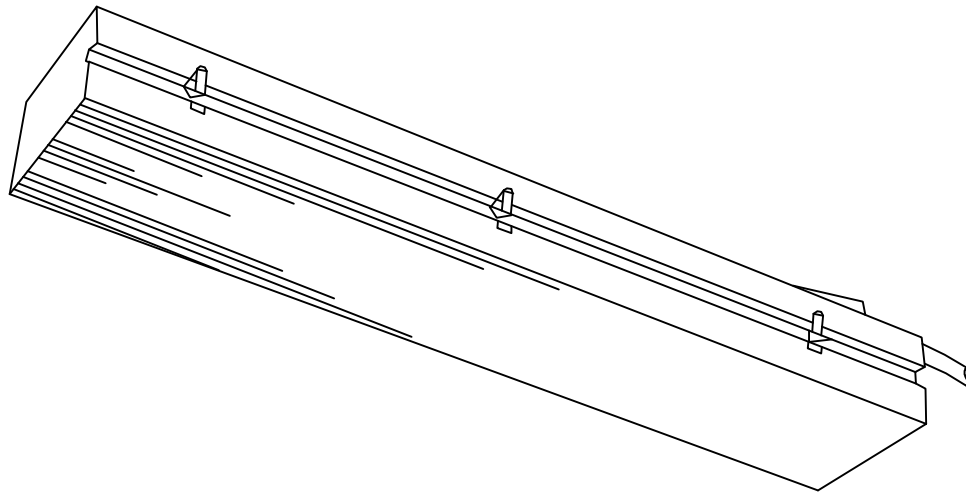
AREA AND STREET LIGHTING CUTOFF LUMINAIRE

SKETCH DATE

JUNE 2002

STYLE

XL-6



LUMINAIRE REQUIREMENTS

1. HOUSING, ALUMINUM OR STEEL – EXTRUDED OR FORMED WITH SEALED AND WELDED SEAMS.
2. REFRACTOR HINGED. ONE PIECE ULTRA VIOLET RESISTANT ACRYLIC – MINIMUM 3.2mm THICK.
3. REFLECTOR – ANODIZED ALUMINUM.
4. LATCHES – STAINLESS STEEL, QUICK RELEASE TYPE.
5. GASKETING – CONTINUOUS, HEAT RESISTANT.
6. BALLAST – HIGH POWER FACTOR.
7. FINISH – BAKED ACRYLIC ENAMEL, POLYESTER POWDER FINISH.
8. HARDWARE – CORROSION RESISTANT.
9. LAMP – 35, 55, 90, 135, OR 180 WATT AS INDICATED.
10. SLIPFITTER – FOR 30mm TO 50mm ARM.
11. PHOTOCCELL – WHEN INDICATED.
12. UL LISTED – SUITABLE FOR OUTDOOR WET LOCATIONS.
13. LAMP STABILIZER.
14. HOUSING SHALL BE MUNSELL GREY UNLESS OTHERWISE INDICATED.

MAX. E.P.A. 0.223 SQ. M.

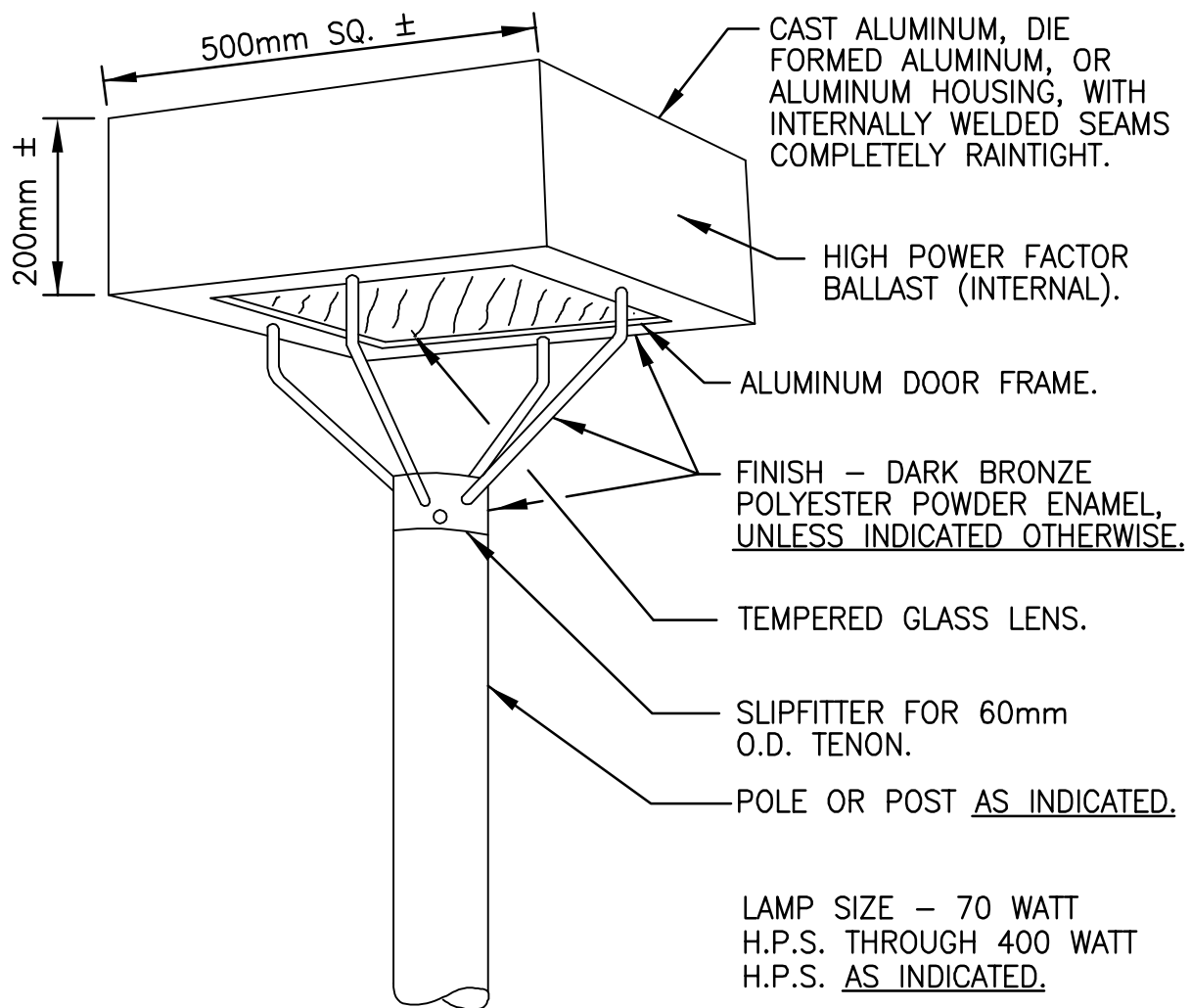
LOW PRESSURE SODIUM AREA LIGHTING FIXTURE

SKETCH DATE

JUNE 2002

STYLE

XL-7



UL LISTED – SUITABLE FOR OUTDOOR WET LOCATIONS.

MAX. E.P.A. 0.2 SQ. M.

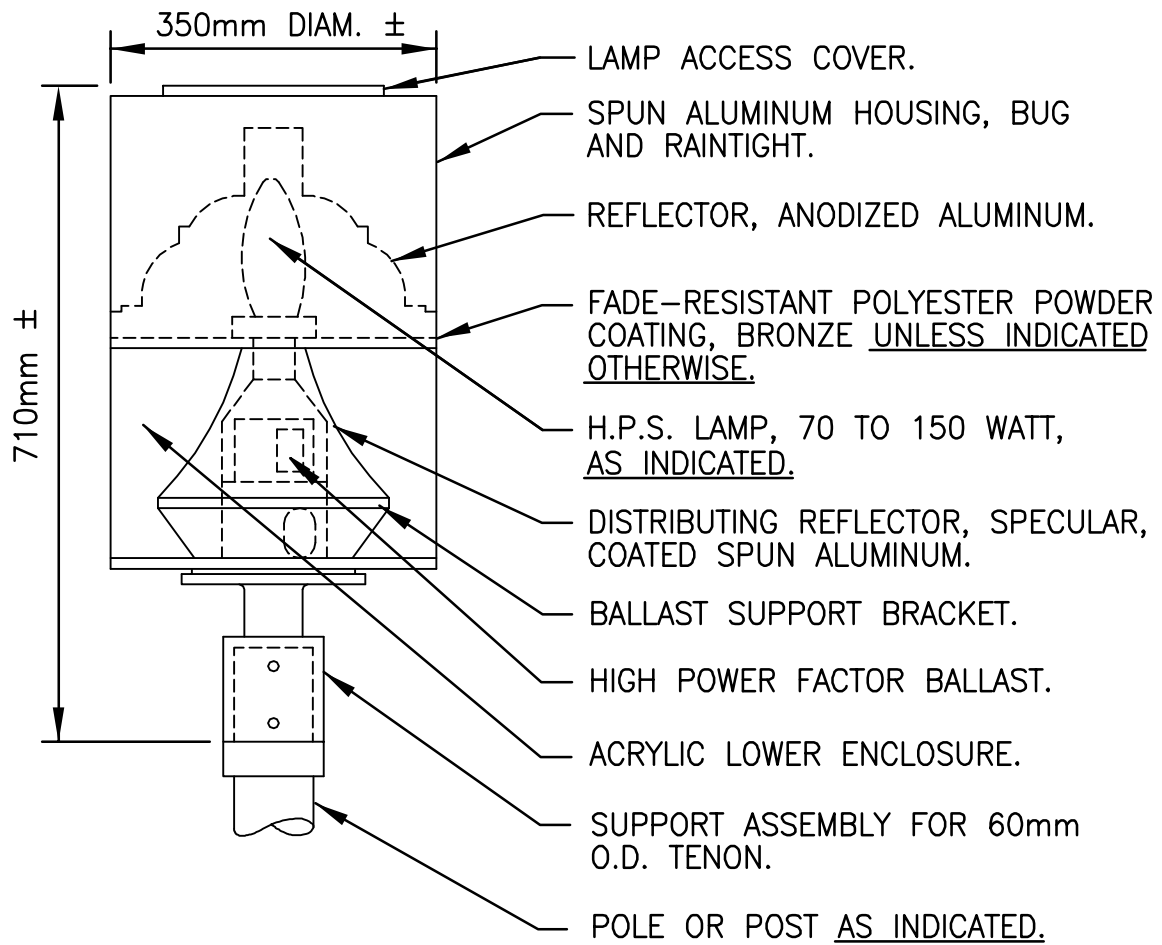
AREA LUMINAIRE

SKETCH DATE

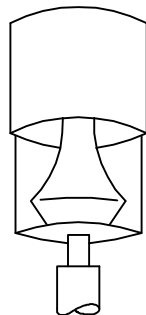
JUNE 2002

STYLE

XL-8



UL LISTED – SUITABLE FOR
OUTDOOR WET LOCATIONS.



PICTORIAL

MAX. E.P.A. 0.093 SQ. M.

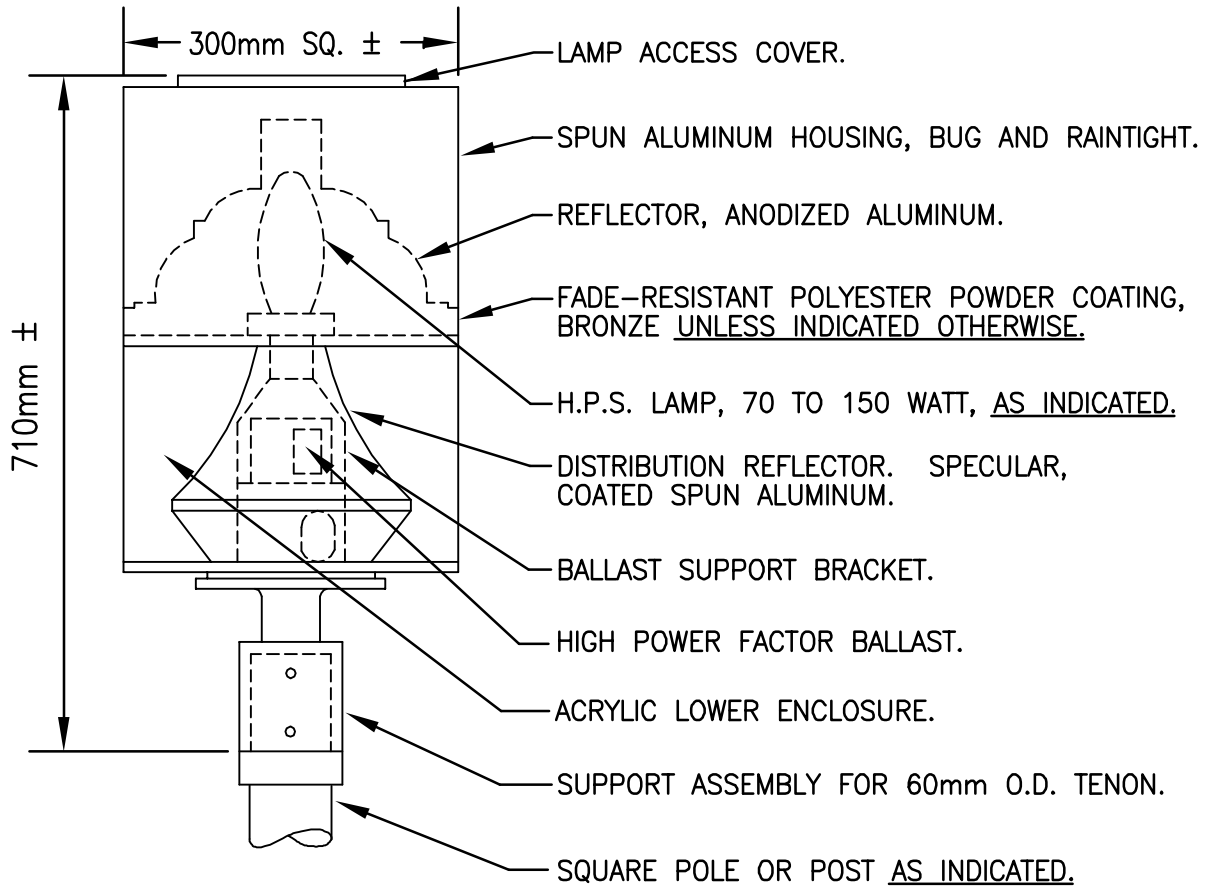
ROUND ARCHITECTURAL POST TOP AREA LIGHT

SKETCH DATE

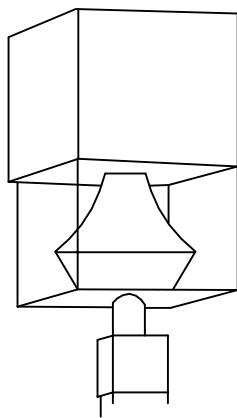
JUNE 2002

STYLE

XL-9



UL LISTED – SUITABLE FOR OUTDOOR WET LOCATIONS.



PICTORIAL

MAX. E.P.A. 0.195 SQ. M.

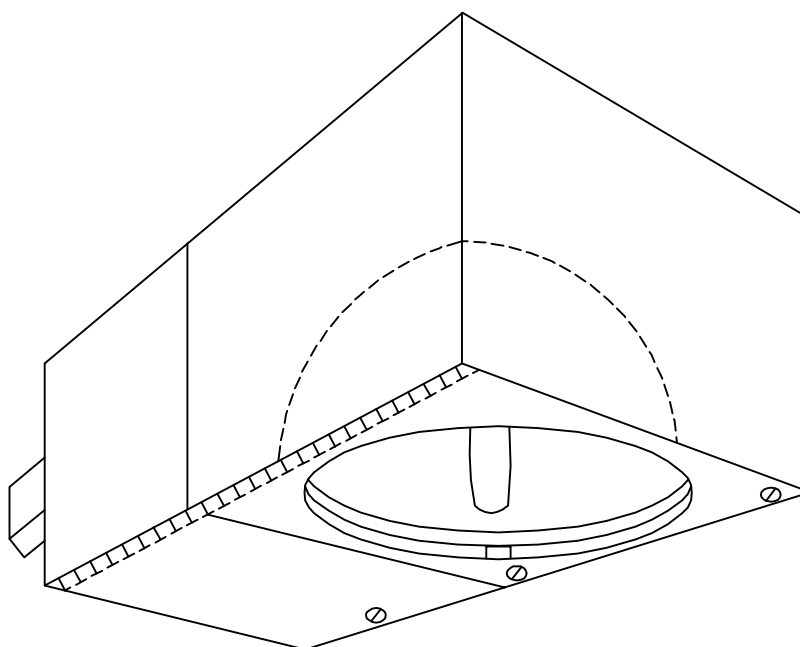
SQUARE ARCHITECTURAL POST TOP AREA LIGHT

SKETCH DATE

JUNE 2002

STYLE

XL-10



NOTE:
TYPE A –
SQUARE
TYPE B –
ROUND

LUMINAIRE REQUIREMENTS

1. HOUSING – CAST, OR FORMED AND SEALED ALUMINUM.
2. FINISH – BAKED ACRYLIC OR VINYL CLAD WITH SEALER OR POLYESTER POWDER.
COLOR – DARK BRONZE OR AS INDICATED.
3. REFLECTOR – ALZAK ALUMINUM.
4. LENS – FLAT, HEAT AND SHOCK-RESISTANT GLASS.
5. HINGED AND GASKETED ALUMINUM DOOR FRAME.
6. INTEGRAL BALLAST WITH 70 TO 1000 WATT HIGH PRESSURE SODIUM AS INDICATED.
7. UL LISTED, SUITABLE FOR OUTDOOR WET LOCATIONS.
8. ADJUSTABLE PORCELAIN SOCKET.
9. STAINLESS STEEL 1/4-TURN OR QUICK-RELEASE LATCHES.
10. SLIPFITTER FOR 50mm O.D. PIPE, OR EXTRUDED MAST ARM, AS INDICATED.
11. MOUNTING ARM AND BOLTS.
12. PHOTOCCELL AND RECEPTACLE, UNLESS OTHERWISE INDICATED.

MAX. E.P.A. – 0.567 SQ. M.

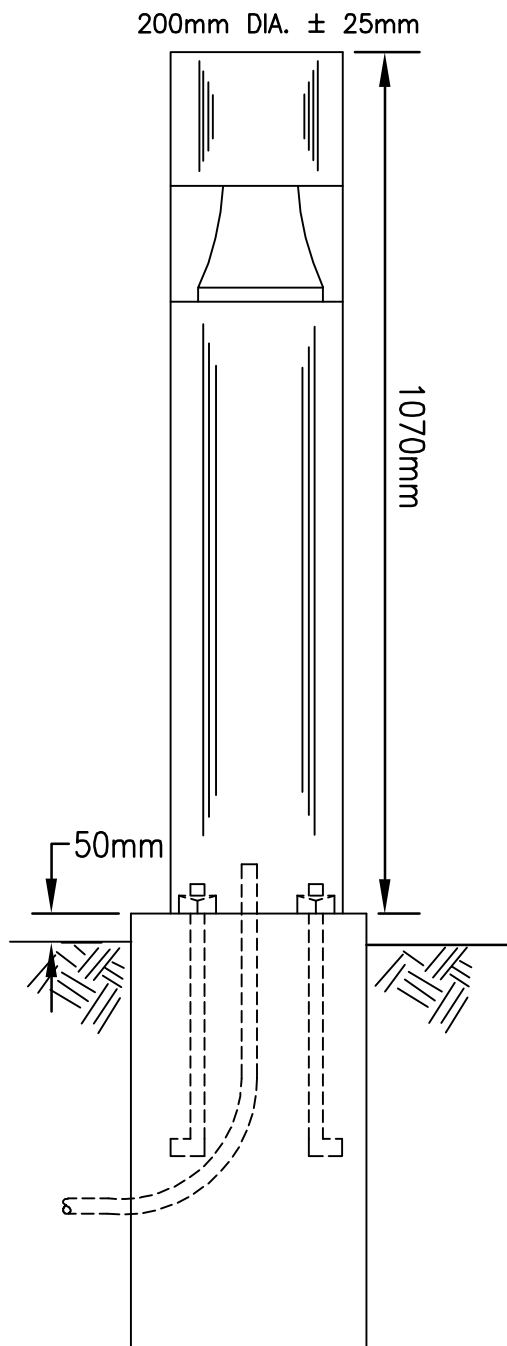
AREA LIGHT – (VERTICAL LAMP)

SKETCH DATE

JUNE 2002

STYLE

XL-11



LUMINAIRE REQUIREMENTS

1. COLUMN, EXTRUDED ALUMINUM (MINIMUM 3.8mm THICK WALL) WITH MEDIUM BRONZE ANODIZED FINISH.
2. COMPLETELY GASKETED WEATHERPROOF TOP LAMP ACCESSORY PLATE.
3. EXTRUDED CLEAR ACRYLIC MINIMUM 4.8mm THICK WALL ENCLOSURE.
4. SEGMENTED SPECULAR CLEAR ALZAK REFLECTOR.
5. CLEAR ALZAK REFLECTING CONE.
6. HIGH POWER FACTOR BALLAST.
7. UL LISTED FOR WET LOCATIONS.
8. 70 WATT HIGH PRESSURE SODIUM LAMP.
9. ANCHOR BOLT KIT PER MANUFACTURER, BUT NOT LESS THAN FOUR $\phi 13\text{mm}$ X 230mm LONG ANCHOR BOLTS WITH 40mm "L" BEND SET IN $\phi 300\text{mm}$ X 610mm DEEP CONCRETE BASE. TOP OF BASE 50mm ABOVE GRADE, AND SHALL HAVE 15mm CHAMFER ALL AROUND.
10. PROVIDE INTERNAL GREEN GROUNDING SCREW.
11. ALL EXPOSED SCREWS SHALL BE STAINLESS STEEL.

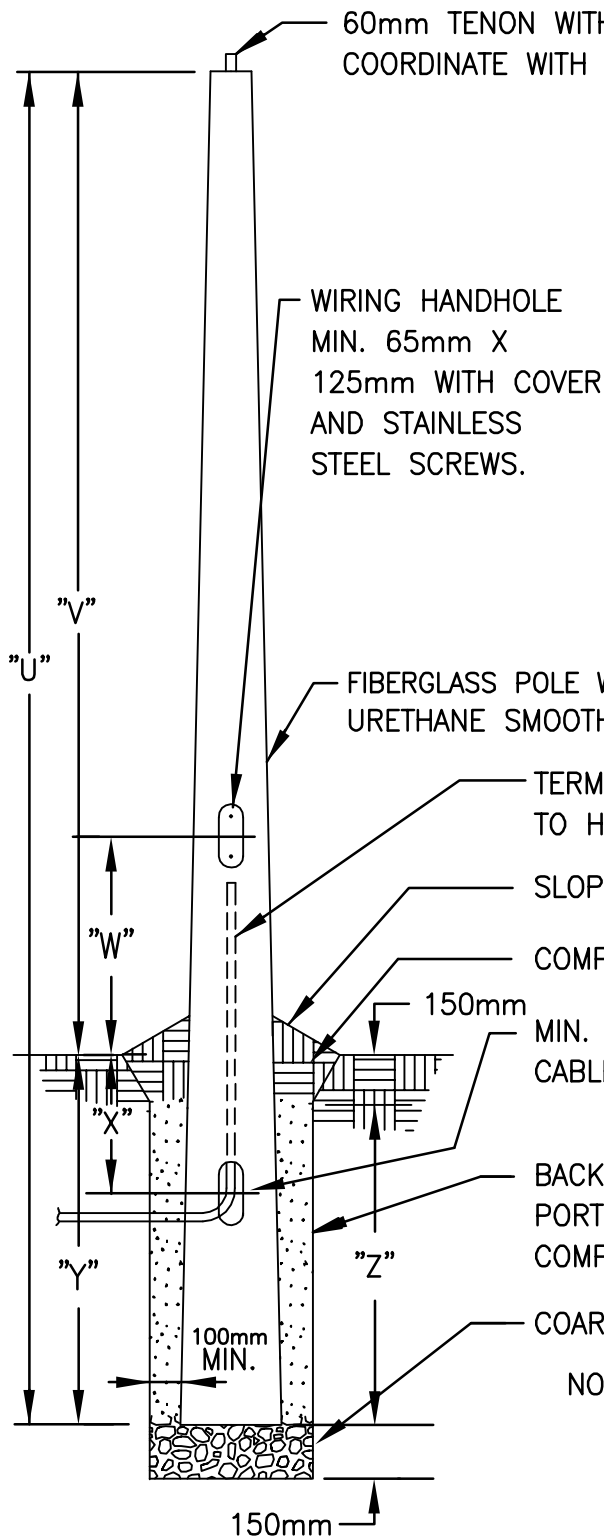
H.I.D. BOLLARD LUMINAIRE

SKETCH DATE

JUNE 2002

STYLE

XL-12



POLE TYPE	DIMENSIONS (METERS)					
	"U"	"V"	"W"	"X"	"Y"	"Z"
XL-20 A	4.3	3.1	0.6	0.6	1.2	1.1
XL-20 B	6.1	4.9	0.6	0.6	1.2	1.1
XL-20 C	7.6	6.1	0.6	0.6	1.5	1.4
XL-20 D	9.1	7.6	0.6	0.6	1.5	1.4
XL-20 E	10.7	9.1	0.6	0.6	1.5	1.4
XL-20 F	12.2	10.1	0.6	0.6	2.1	2.0
XL-20 G	13.7	11.6	0.6	0.6	2.1	2.0

TERMINATE CONDUITS INTERNALLY, ADJACENT TO HANDHOLE.

SLOPE TO SURROUNDING FINISHED GRADE.

COMPACTED CLAY BACKFILL.

MIN. 75mm X 125mm (CLEAR) CONDUIT OR CABLE ENTRANCE - 2 EACH AT 180°.

BACKFILL FINE CRUSHED STONE AND PORTLAND CEMENT (8-1) DRY MIX COMPACTED IN 150mm LAYERS.

COARSE GRAVEL SETTING BED.

- NOTES 1. PROVIDE ANTI-ROTATIONAL DEVICE ON EACH POLE.
2. COORDINATE TOTAL EPA. WITH POLE SPECIFICATIONS.

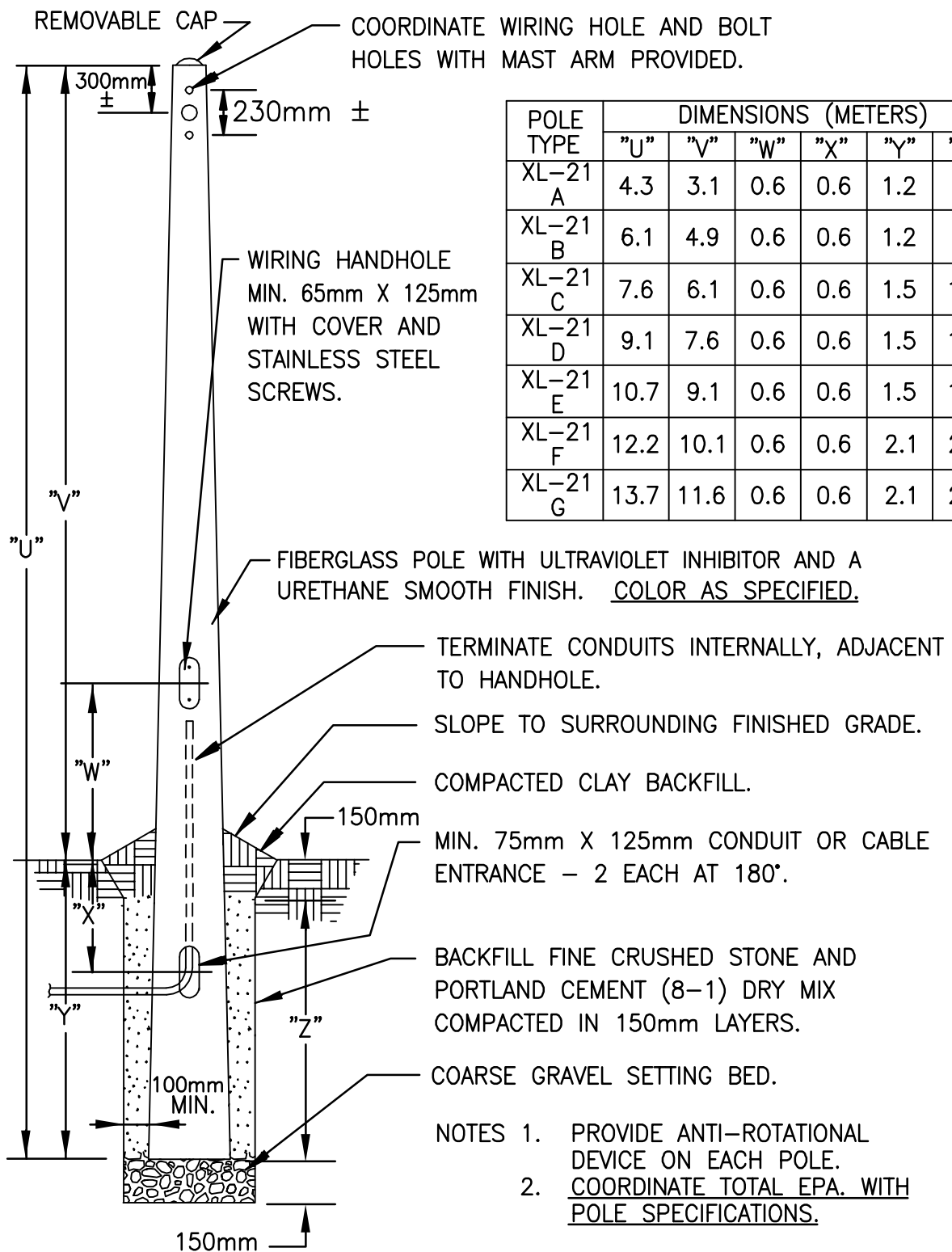
ROUND FIBERGLASS POLE, DIRECT SET TENON MOUNT

SKETCH DATE

JUNE 2002

STYLE

XL-20



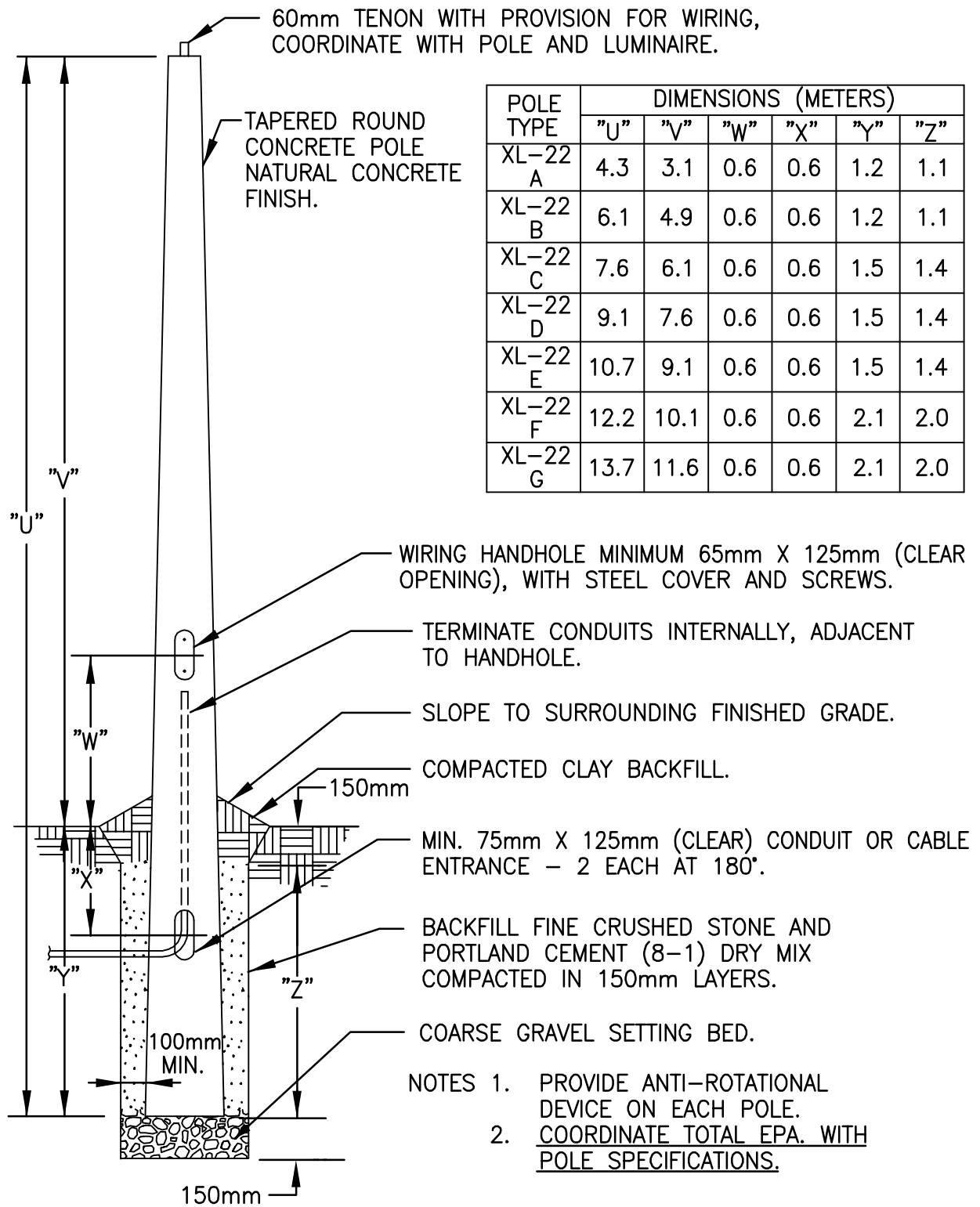
ROUND FIBERGLASS POLE, DIRECT SET MAST ARM MOUNT

SKETCH DATE

JUNE 2002

STYLE

XL-21



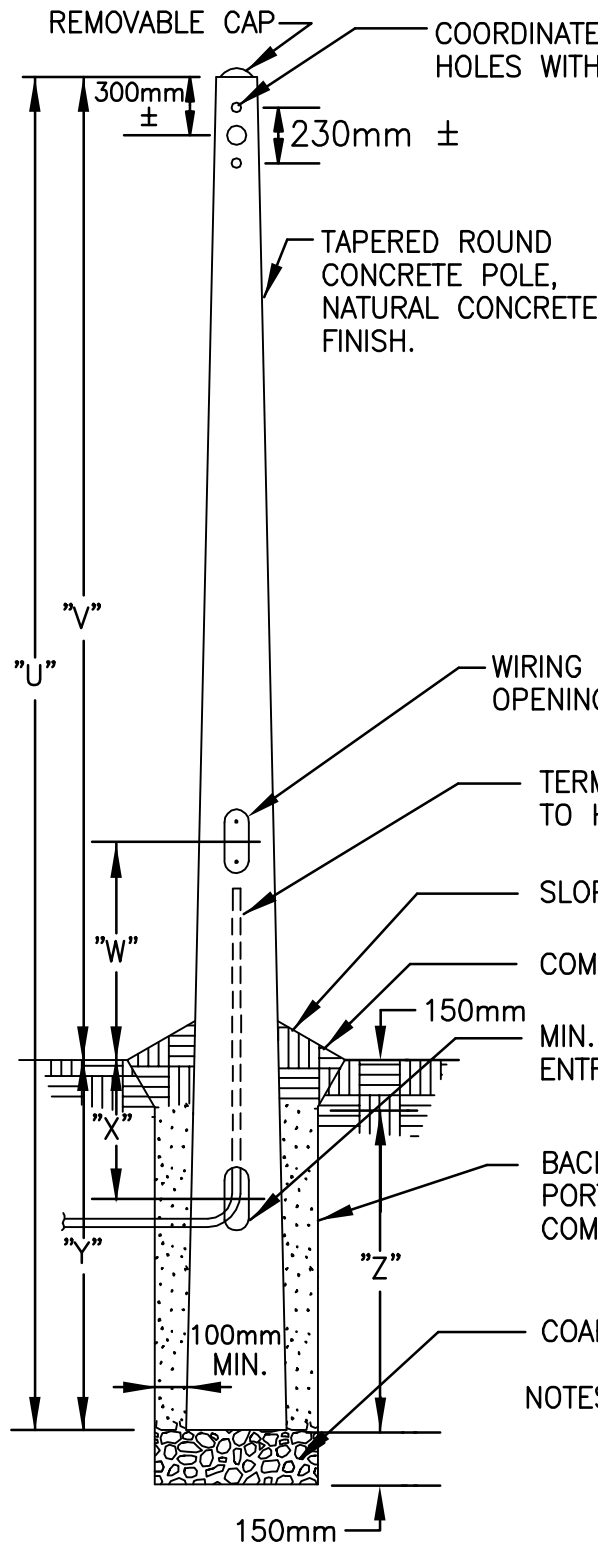
ROUND CONCRETE POLE, DIRECT SET TENON MOUNT

SKETCH DATE

JUNE 2002

STYLE

XL-22



POLE TYPE	DIMENSIONS (METERS)					
	"U"	"V"	"W"	"X"	"Y"	"Z"
XL-23 A	4.3	3.1	0.6	0.6	1.2	1.1
XL-23 B	6.1	4.9	0.6	0.6	1.2	1.1
XL-23 C	7.6	6.1	0.6	0.6	1.5	1.4
XL-23 D	9.1	7.6	0.6	0.6	1.5	1.4
XL-23 E	10.7	9.1	0.6	0.6	1.5	1.4
XL-23 F	12.2	10.1	0.6	0.6	2.1	2.0
XL-23 G	13.7	11.6	0.6	0.6	2.1	2.0

WIRING HANDHOLE MINIMUM 65mm X 125mm (CLEAR OPENING), WITH STEEL COVER AND SCREWS.

TERMINATE CONDUITS INTERNALLY, ADJACENT TO HANDHOLE.

SLOPE TO SURROUNDING FINISHED GRADE.

COMPACTED CLAY BACKFILL.

MIN. 75mm X 125mm CONDUIT OR CABLE ENTRANCE - 2 EACH AT 180°.

BACKFILL FINE CRUSHED STONE AND PORTLAND CEMENT (8-1) DRY MIX COMPACTED IN 150mm LAYERS.

COARSE GRAVEL SETTING BED.

- NOTES 1. PROVIDE ANTI-ROTATIONAL DEVICE ON EACH POLE.
2. COORDINATE TOTAL EPA. WITH POLE SPECIFICATIONS.

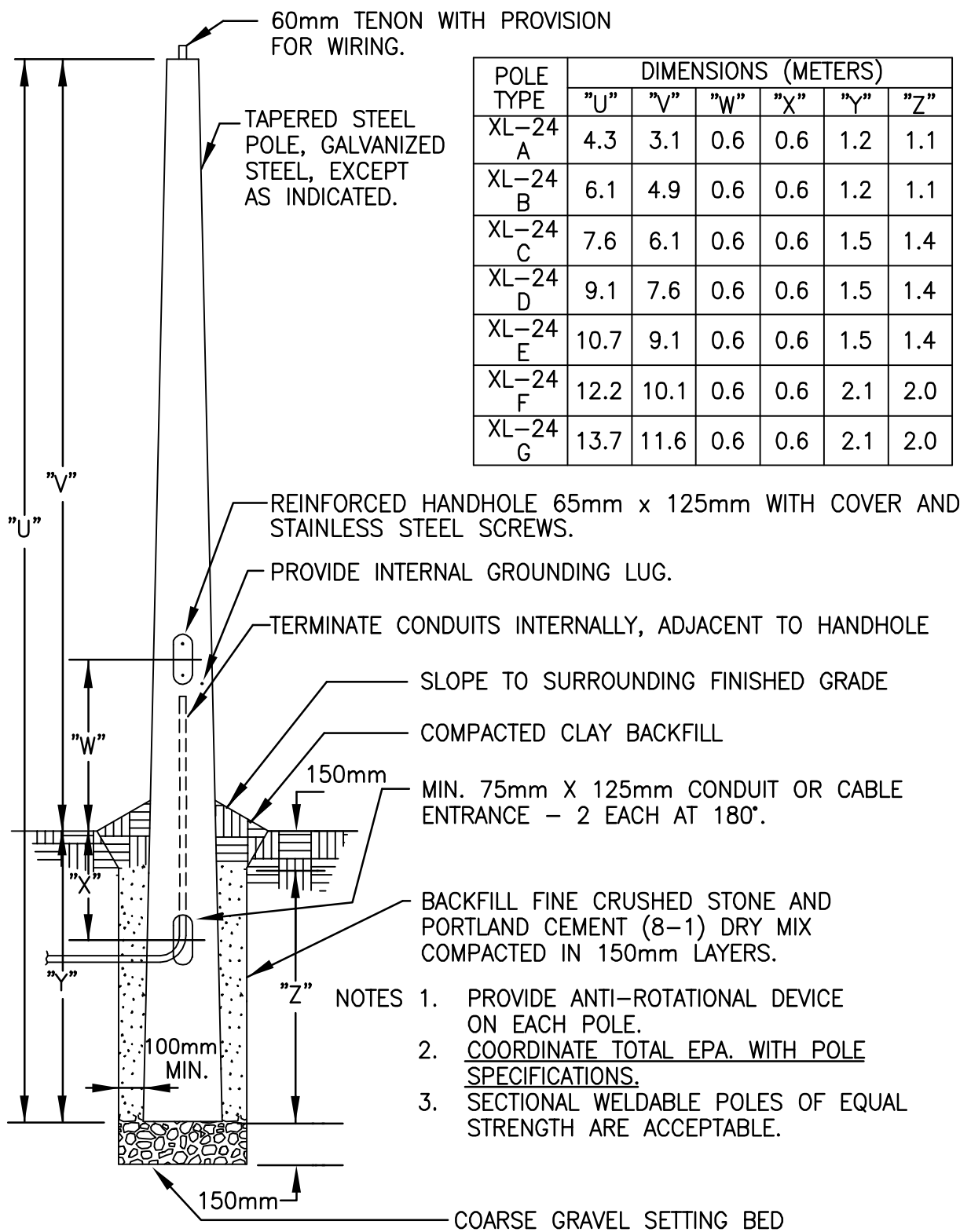
ROUND CONCRETE POLE, DIRECT SET MAST ARM MOUNT

SKETCH DATE

JUNE 2002

STYLE

XL-23



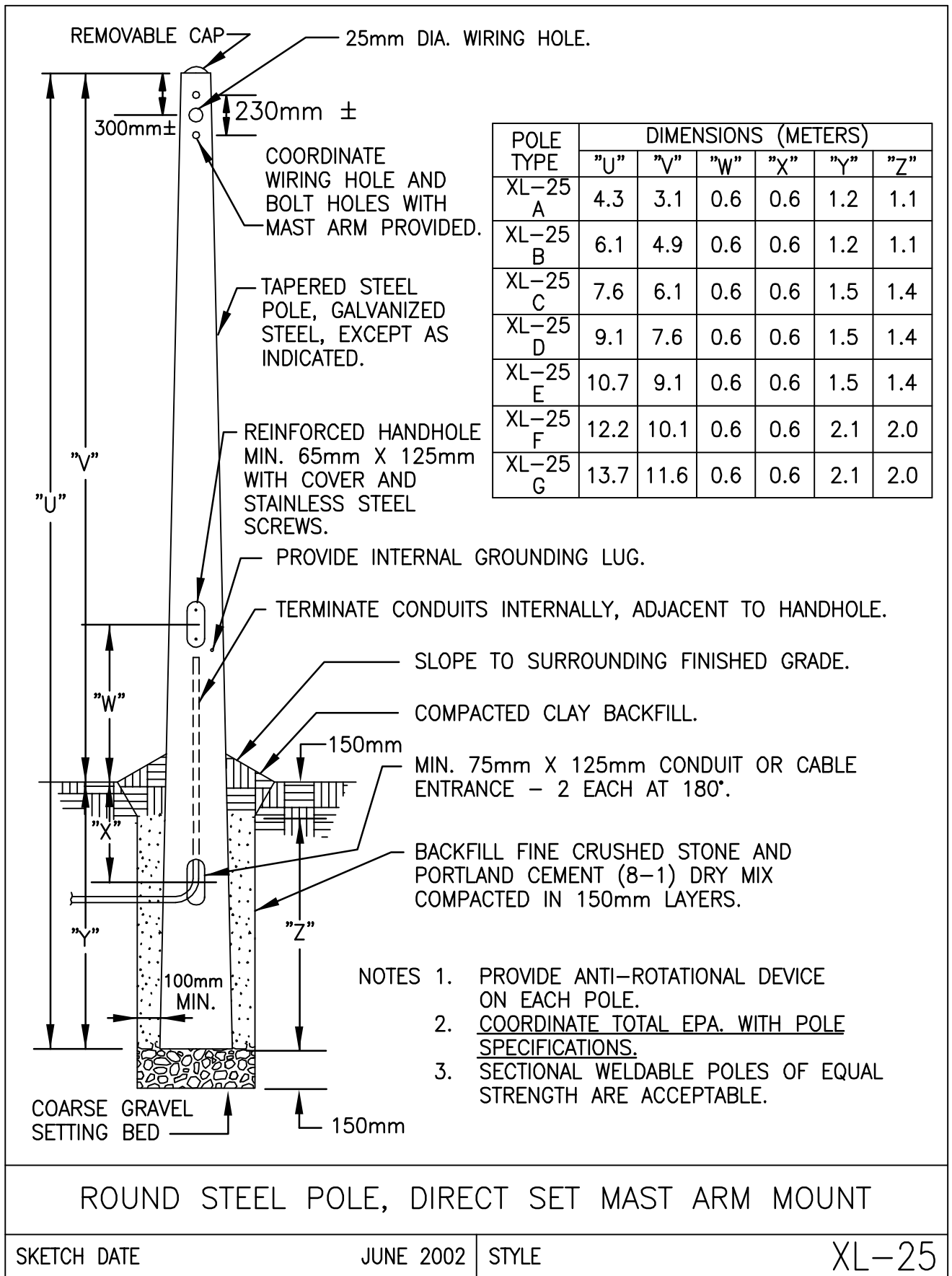
ROUND STEEL POLE, DIRECT SET TENON MOUNT

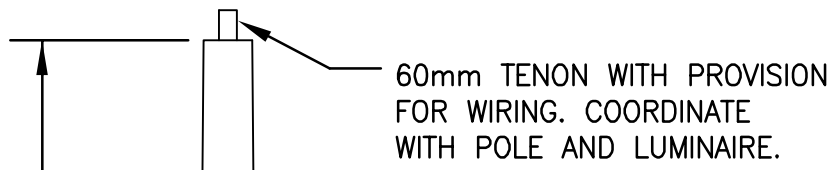
SKETCH DATE

JUNE 2002

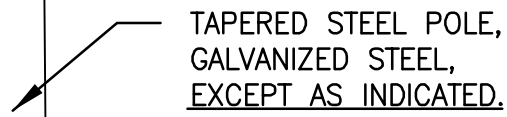
STYLE

XL-24



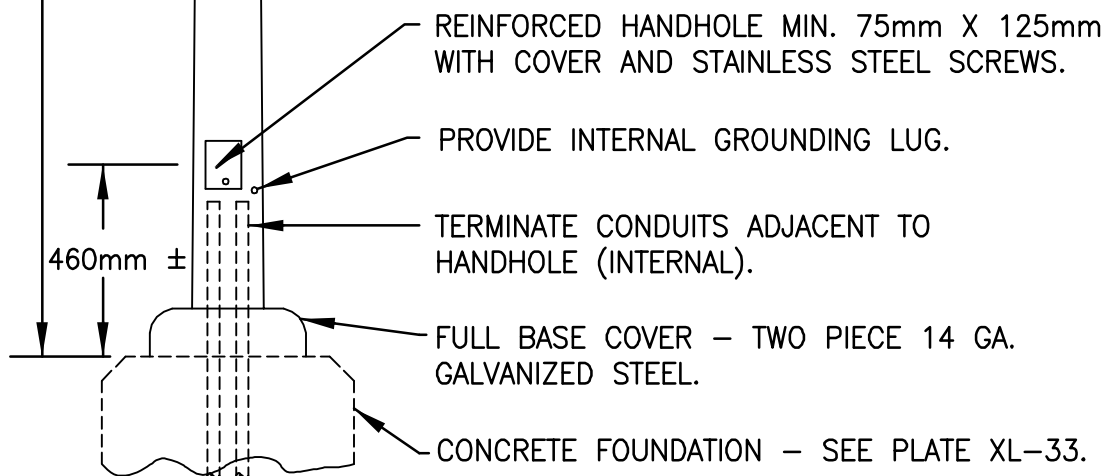


POLE TYPE	DIM
	"U"
XL-26 A	3.7M
XL-26 B	6.1M
XL-26 C	7.6M
XL-26 D	9.1M
XL-26 E	10.7M
XL-26 F	12.2M
XL-26 G	13.7M



NOTES:

1. COORDINATE POLE AND LUMINAIRE E.P.A. WITH SPECIFICATIONS.



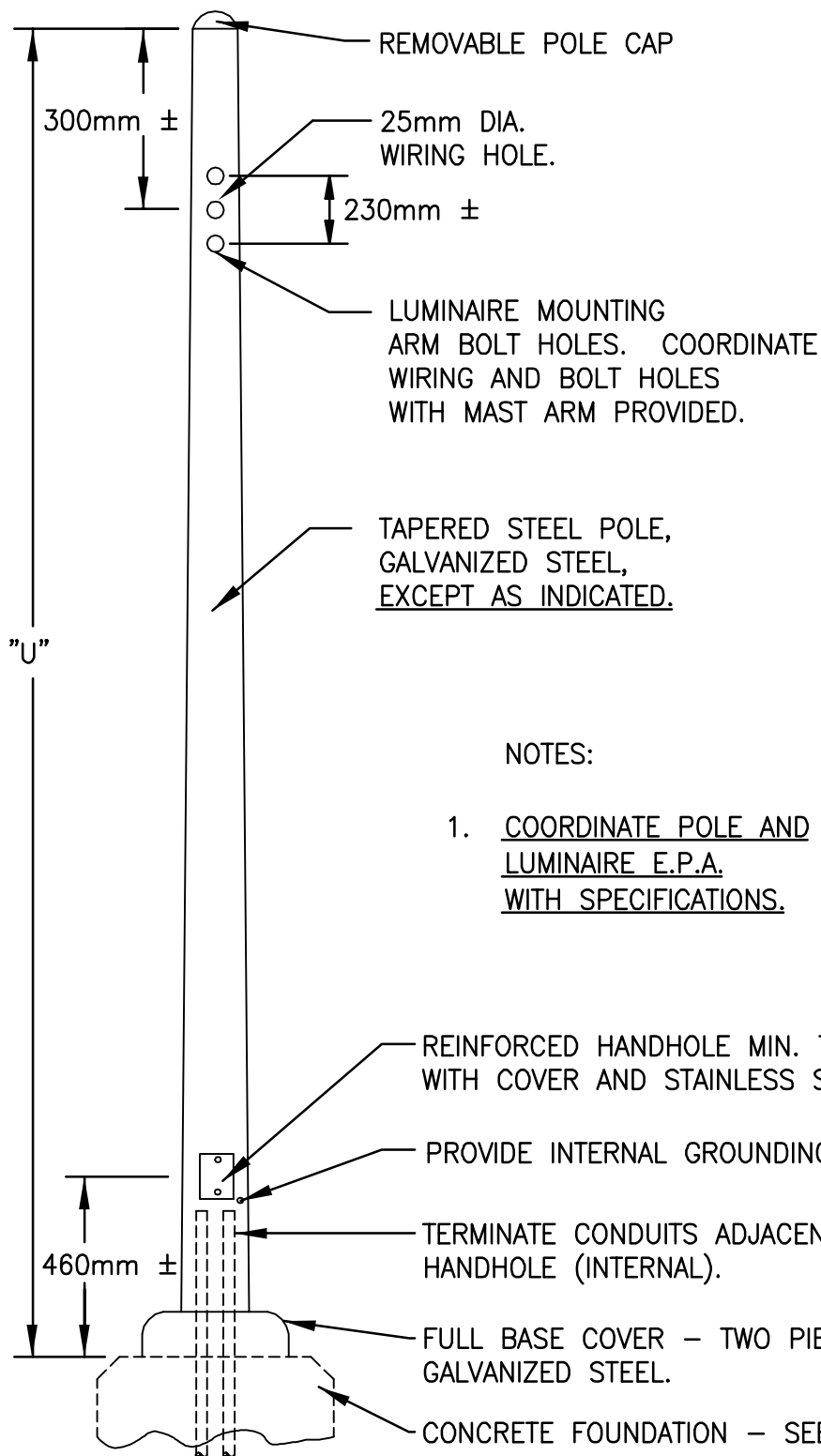
ROUND STEEL POLE, ANCHOR BASE, TENON MOUNT

SKETCH DATE

JUNE 2002

STYLE

XL-26



POLE TYPE	DIM
	"U"
XL-27 A	3.7M
XL-27 B	6.1M
XL-27 C	7.6M
XL-27 D	9.1M
XL-27 E	10.7M
XL-27 F	12.2M
XL-27 G	13.7M

NOTES:

1. COORDINATE POLE AND LUMINAIRE E.P.A. WITH SPECIFICATIONS.

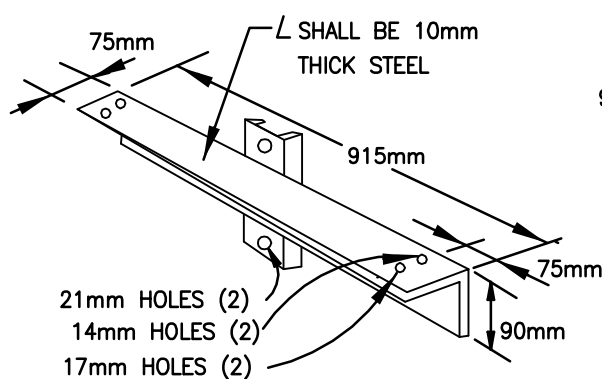
ROUND STEEL POLE, ANCHOR BASE, MAST ARM MOUNT

SKETCH DATE

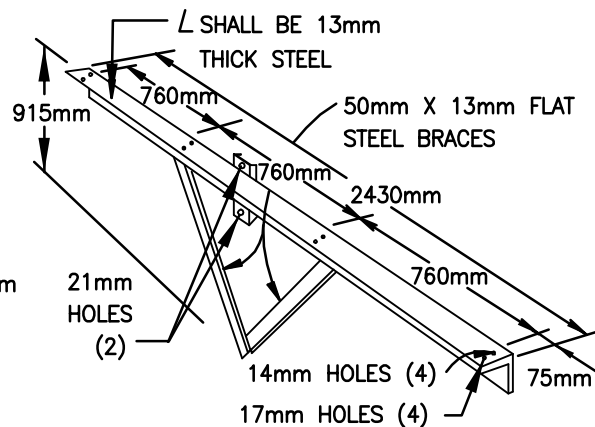
JUNE 2002

STYLE

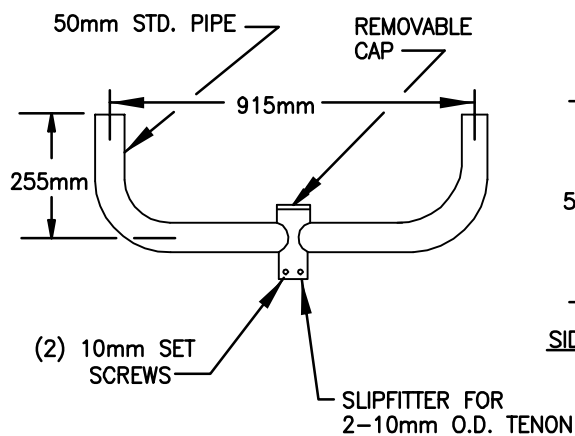
XL-27



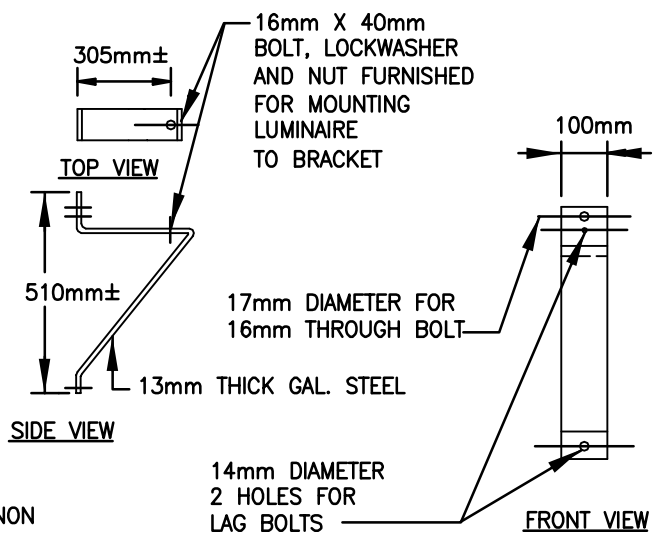
TWO LUMINAIRE MOUNTING
BRACKET - "A"



FOUR LUMINAIRE MOUNTING
BRACKET - "B"



TWO LUMINAIRE PIPE
MOUNTING BRACKET - "C"



STEEL ANGLE SINGLE LUMINAIRE MOUNTING
BRACKET - FOR WALL OR POLE - "D"

- NOTES: 1. ALL MATERIALS SHOWN ON THIS SHEET SHALL BE HOT-DIP GALVANIZED.
2. PROVIDE BOLTS AND OTHER HARDWARE AS REQUIRED.

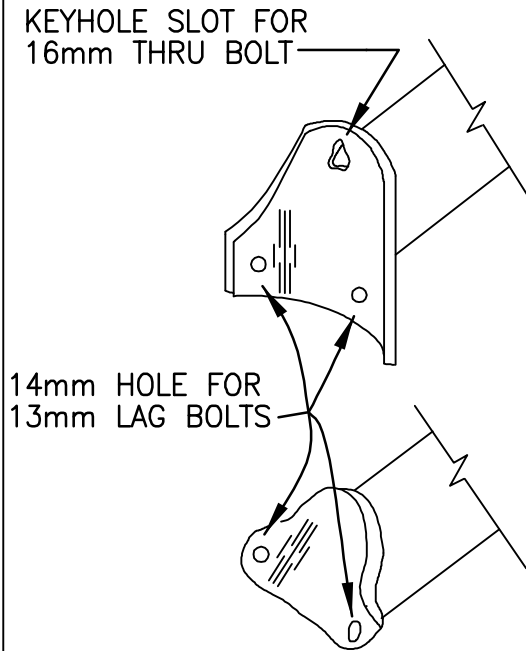
LUMINAIRE MOUNTING BRACKETS

SKETCH DATE

JUNE 2002

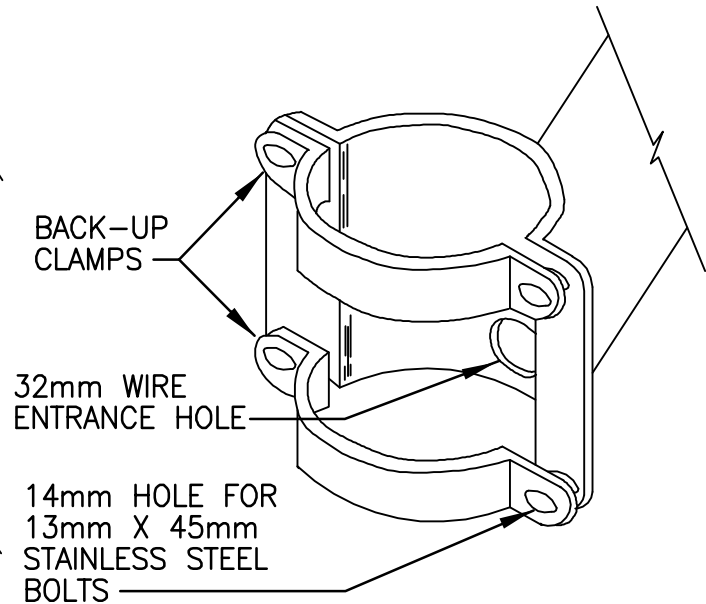
STYLE

XL-28



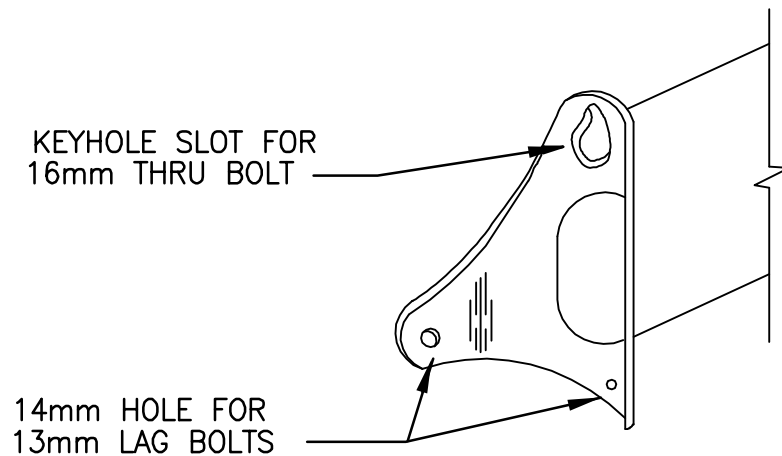
MOUNTING PLATE FOR TRUSS
MEMBER TAPERED ELLIPTICAL ARM

"A"



MOUNTING PLATE FOR SINGLE
MEMBER TAPERED ELLIPTICAL ARM

"B"



MOUNTING PLATE FOR SINGLE
MEMBER TAPERED ELLIPTICAL ARM

"C"

NOTE:

TYPES "A" & "C" ARE
FOR WOOD POLES, TYPE
"B" IS FOR CONCRETE
OR STEEL POLES.

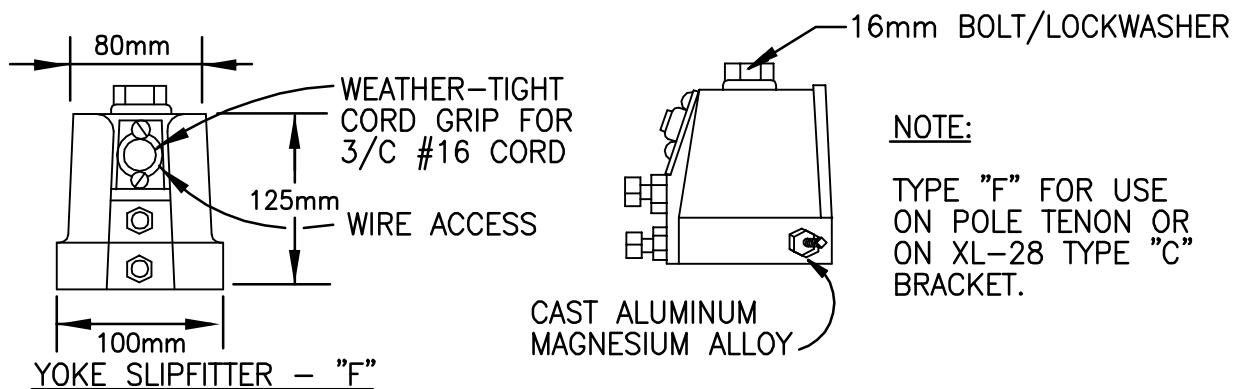
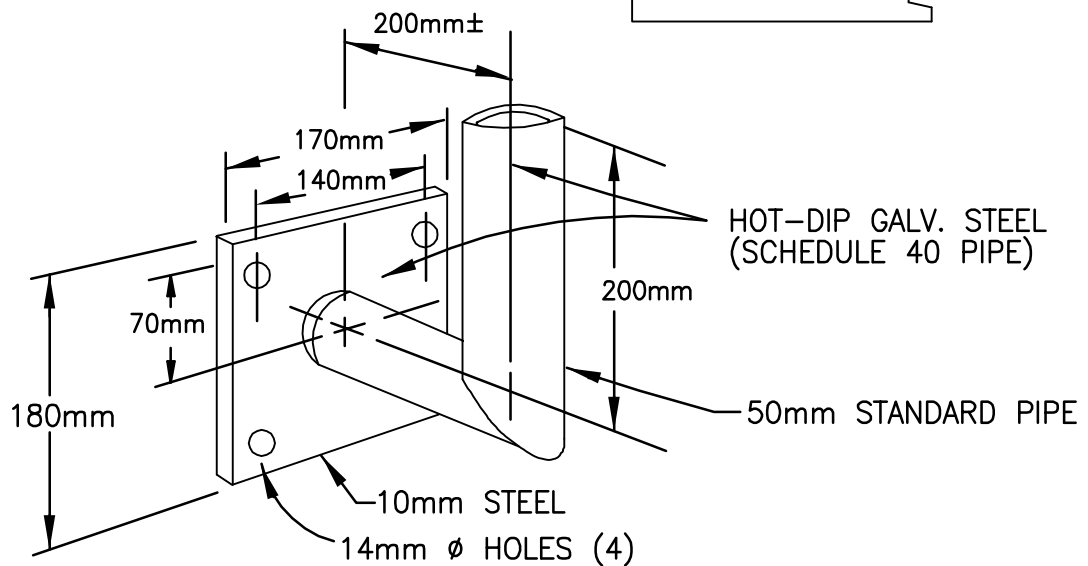
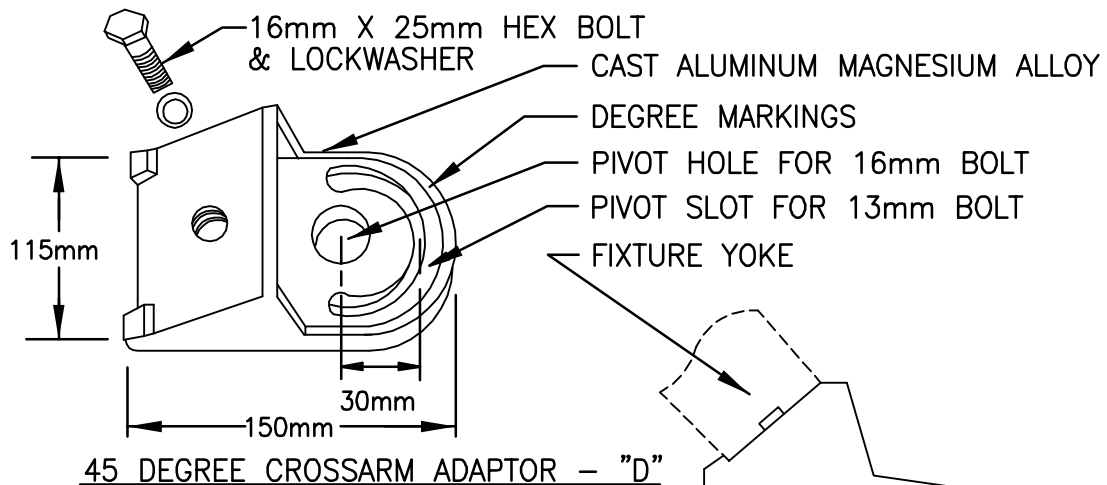
VARIOUS LUMINAIRE MOUNTING ARM TYPES

SKETCH DATE

JUNE 2002

STYLE

XL-29



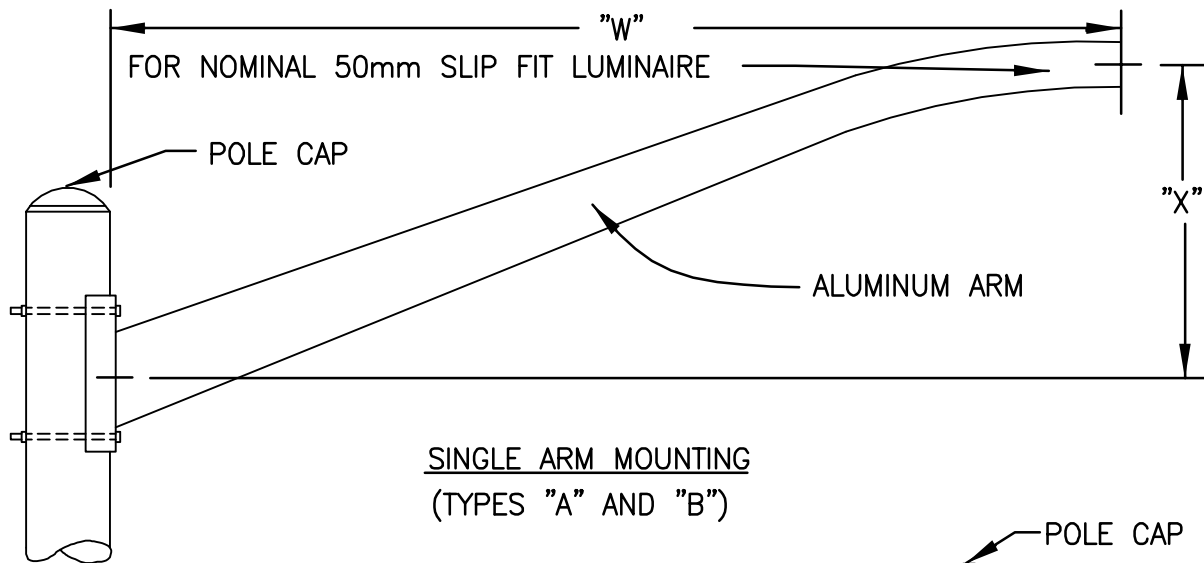
MISCELLANEOUS LUMINAIRE MOUNTING BRACKETS

SKETCH DATE

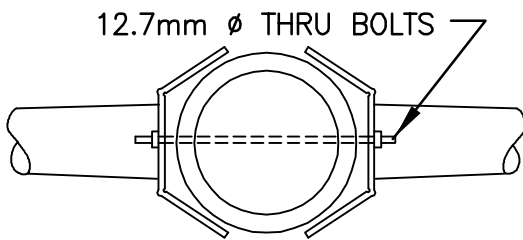
JUNE 2002

STYLE

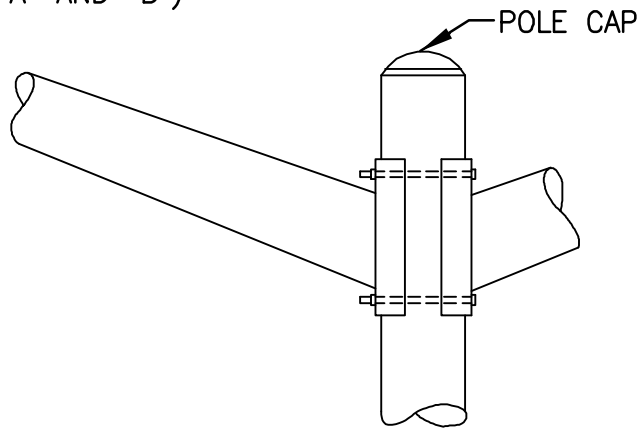
XL-30



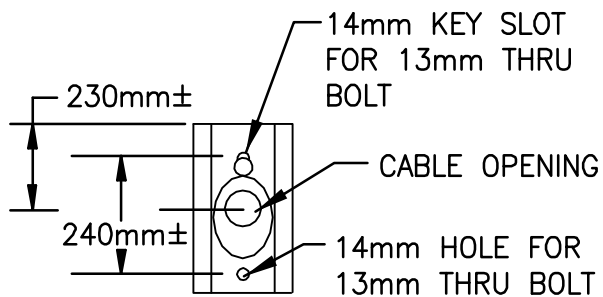
SINGLE ARM MOUNTING
(TYPES "A" AND "B")



PLAN



DOUBLE ARM MOUNTING
(TYPES "C" AND "D")



MOUNTING PLATE

MOUNTING ARM DIMENSIONS		
TYPE	"W" (NOM)	"X" (NOM)
XL-31, A	1220mm	380mm
XL-31, B	1830mm	610mm
XL-31, C	1220mm	380mm
XL-31, D	1830mm	610mm

NOTE: ALL MOUNTING HARDWARE FOR ARMS
SHALL BE HOT-DIP GALVANIZED.

LUMINAIRE MOUNTING ARMS

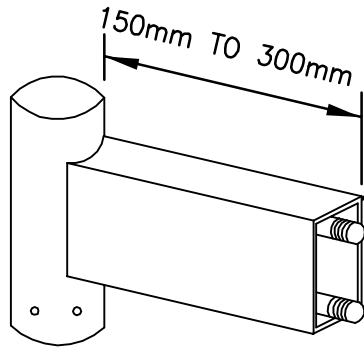
SKETCH DATE

JUNE 2002

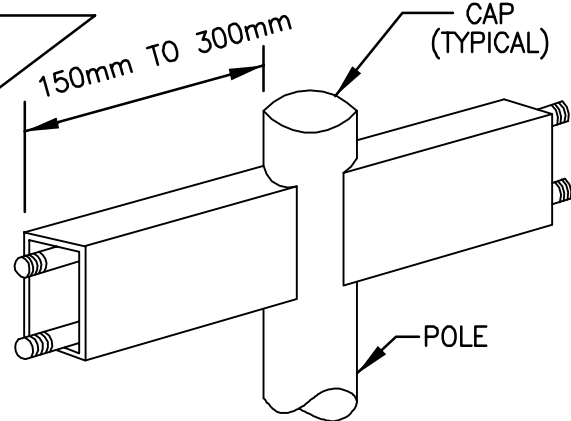
STYLE

XL-31

RECTANGULAR ALUMINUM EXTRUSION
APPROXIMATELY 65mm X 125mm (TYPICAL)

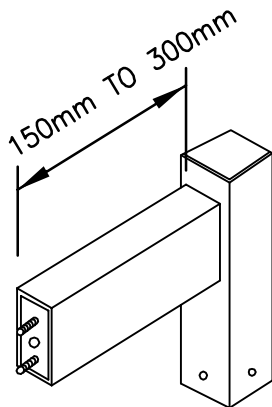


SINGLE ARM MOUNTING "A"
(TENON MOUNT SHOWN)



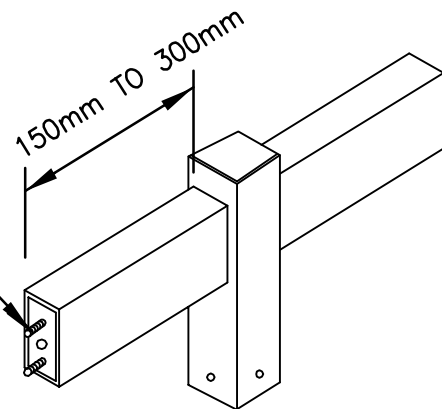
DOUBLE ARM MOUNTING "B"
(MAST ARM MOUNT SHOWN)

ROUND POLE MOUNTING



SINGLE ARM MOUNTING "C"
(TENON MOUNT SHOWN)

13mm \varnothing THREADED
RODS (TYPICAL)



DOUBLE ARM MOUNTING "D"
(TENON MOUNT SHOWN)

SQUARE MOUNTING ARMS

- NOTES: 1. ALL FASTENERS SHALL BE CONCEALED.
2. ALL ARMS ARE AVAILABLE IN TENON OR
MAST ARM MOUNT, SPECIFY TYPE DESIRED.

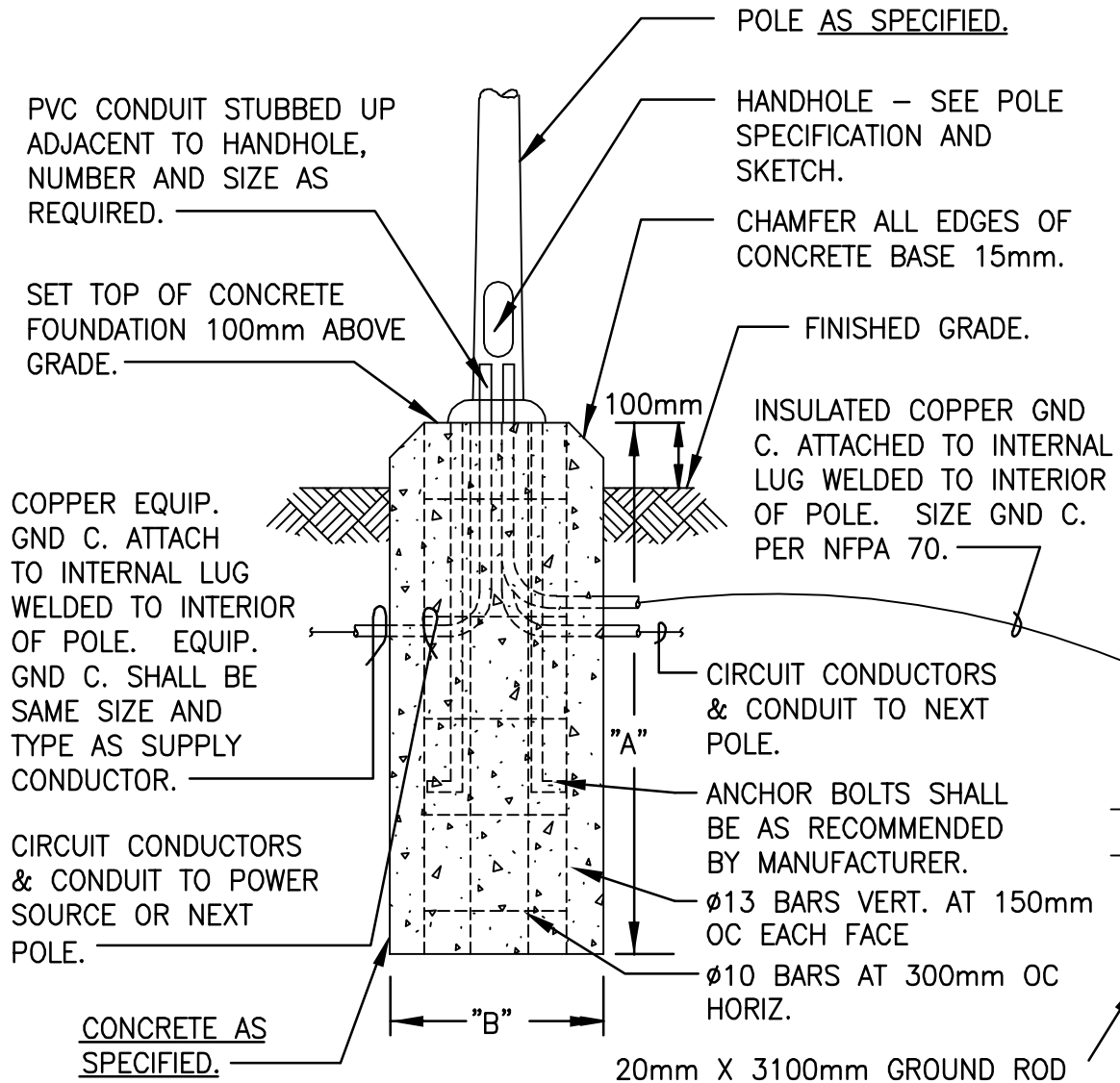
LUMINAIRE MOUNTING ARMS

SKETCH DATE

JUNE 2002

STYLE

XL-32



LEGEND

GND C. - GROUNDING CONDUCTOR

POLE HT.*	A*	B*
2.4 - 3.7	0.9	0.3
4.0 - 6.1	1.1	0.4
6.4 - 9.1	1.8	0.6
9.5 - 9.1	2.0	0.8

* DIMENSIONS IN METERS

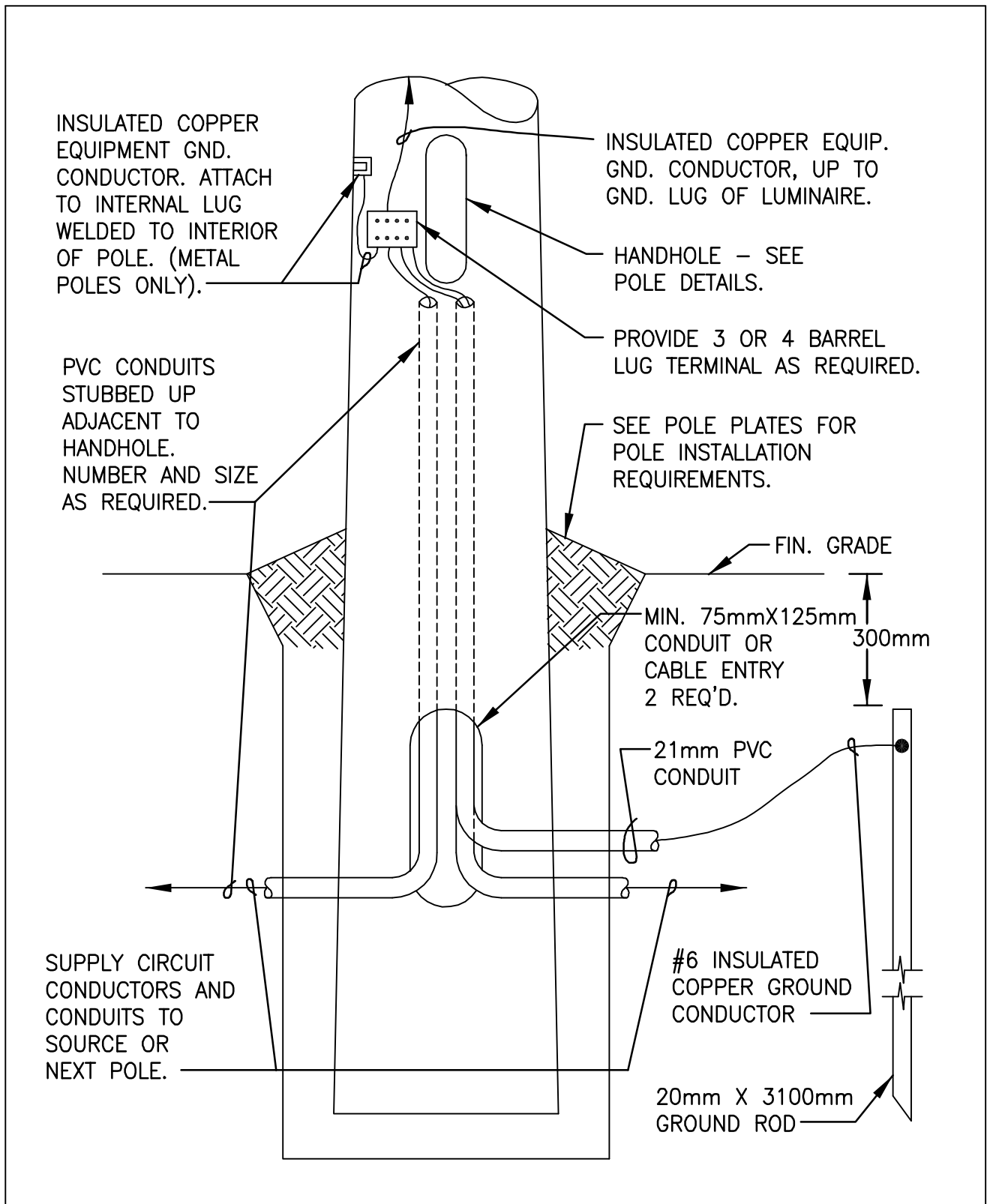
BOLT-DOWN POLE FOUNDATION

SKETCH DATE

JUNE 2002

STYLE

XL-33



GROUNDING INSTALLATION DETAILS FOR DIRECT SET POLES

SKETCH DATE

JUNE 2002

STYLE

XL-34